Attorney Docket No.: AM-6051.P1 (1630-102) By Facsimile to: (571) 273-8300

IN THE CLAIMS:

Please cancel Claims 1, 6 - 14, 16, 18, 20, 22, 24 – 36, 45, and 53 - 55 without prejudice.

Please amend Claims 42 and 50, and add Claims 69 - 70 as follows.

1. - 41. (Cancelled)

42. (Currently Amended) A method of preparing a gas distribution assembly for use in semiconductor processing equipment, wherein said method comprises:

a) providing a plurality of metal layers wherein said plurality of metal layers comprise a metal selected from the group consisting of a stainless steel, a corrosion-resistant nickel-comprising alloy, a corrosion-resistant cobalt-comprising alloy, and combinations thereof, wherein the average surface roughness of each of said plurality of metal layers ranges from about 0.1 microinches Ra to about 30 microinches Ra;

b) chemically or electrochemically etching at least one feature through at least one of said metal layers;

c) aligning said plurality of metal layers; and

d) diffusion bonding said plurality of metal layers.

43. (Cancelled)

44. (Previously Amended) The method of Claim 42, wherein said plurality of metal layers includes a corrosion resistant nickel alloy.

45. (Cancelled)

46. (Original) The method of Claim 42, wherein said metal layers to be diffusion bonded have a thickness within the range of about 0.0005 inch to about 0.06 inch.

47. (Original) The method of Claim 42, wherein said at least one feature includes a shaped through hole.

48. (Original) The method of Claim 47, wherein said shaped through hole is aligned with a shaped through hole in an adjacent layer prior to diffusion bonding, thereby forming a gas flow channel in said plurality of metal layers after diffusion bonding.

49. (Original) The method of Claim 42, wherein at least one layer of said plurality of metal layers includes at least one shaped through hole which is adapted for mounting of at least one component.

50. (Currently Amended) The method of Claim 42, wherein said method includes aligning and simultaneously diffusion bonding at least a portion of a component device into said plurality of metal layers, as said metal layers are diffusion bonded.

51. (Original) The method of Claim 50, wherein said at least one component device is selected from the group consisting of manually operated valves, automatic valves, pressure and temperature sensors, flow controllers, filters, pressure regulators, check valves, metering valves, needle valves, and purifiers.

52. (Previously Amended) The method of Claim 42, wherein each of said metal layers is 400 series stainless steel, and wherein diffusion bonding is performed at a temperature within the range of about 1000°C to about 1300°C, at a pressure within the range of about 3000 psi to about 5000 psi, for a time period within the range of about 3 hours to about 6 hours.

53. - 68. (Cancelled)

69. (New) The method of Claim 42, wherein the average surface roughness of said plurality of layers ranges from about 0.5 microinches Ra to about 10 microinches Ra.

70. (New) The method of Claim 69, wherein the average surface roughness of said plurality of layers ranges from about 1.5 microinches Ra to about 3 microinches Ra.